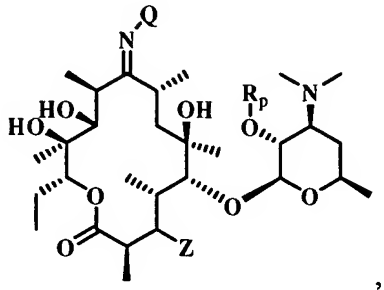
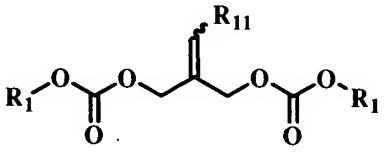
WHAT IS CLAIMED:

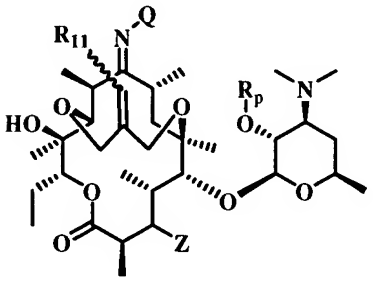
1. A process comprising the step of reacting a compound of formula (I):



or a pharmaceutically acceptable salt thereof, with a compound of formula II:



to produce a compound of formula III:

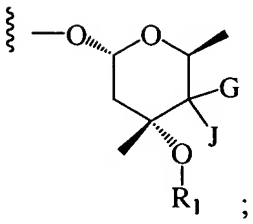


wherein,

Each R_1 is independently selected from hydrogen, acyl, silane, a substituted or unsubstituted, saturated or unsaturated aliphatic group, a substituted or unsubstituted, saturated or unsaturated alicyclic group, a substituted or unsubstituted aromatic group, a substituted or unsubstituted heteroaromatic group, saturated or unsaturated heterocyclic group;

Each of R_3 and R_4 is independently selected from hydrogen, acyl, a substituted or unsubstituted, saturated or unsaturated aliphatic group, a substituted or unsubstituted, saturated or unsaturated alicyclic group, a substituted or unsubstituted aromatic group, a substituted or unsubstituted heteroaromatic group, saturated or unsaturated heterocyclic group; or can be taken together with the nitrogen atom to which they are attached to form a substituted or unsubstituted heterocyclic or heteroaromatic ring;

Q is independently selected from R_1, OR_1, or $OC(O)R_1$;



Z is selected from R_1, OR_1, $OC(O)R_1$, $OC(O)NR_3R_4$, $OS(O)_nR_1$, or ;

one of J or G is hydrogen and the other is selected from R_1, OR_1, or NR_3R_4;

or, J and G, taken together with the carbon atom to which they are attached, are selected from C=O, $C=NR_1$, $C=NOR_1$, $C=NO(CH_2)_mR_1$, $C=NNHR_1$, $C=NNHCOR_1$, $C=NNHCONR_3R_4$, $C=NNHS(O)_nR_1$, or $C=N\text{-}N=CHR_1$;

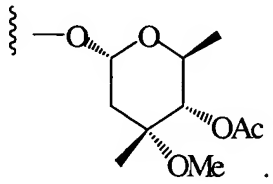
R_{11} is independently selected from R_1;

R_p is independently selected from R_1;

m is an integer; and

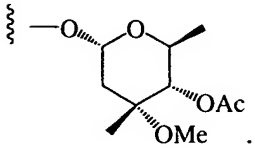
n is 0, 1, or 2.

2. The process of claim 1, wherein the step of reacting occurs in the presence of a palladium catalyst.
3. The process of claim 2, wherein the palladium catalyst is a palladium (0) catalyst.
4. The process of claim 2, wherein the palladium catalyst is $Pd_2(dba)_3$.
5. The process of claim 1, wherein the step of reacting is in the presence of a monodentate phosphorous-containing ligand.
6. The process of claim 1, wherein the step of reacting is in the presence of a bidentate phosphorous-containing ligand.
7. The process of claim 1, wherein the step of reacting is in the presence of 1,4-bis(diphenylphosphino)butane.
8. The process of claim 1, wherein the step of reacting occurs in an aprotic solvent.
9. The process of claim 8, wherein the aprotic solvent is tetrahydrofuran.
10. The process of claim 1, wherein for formula I, Q is OAc, R_p is Ac, and Z is



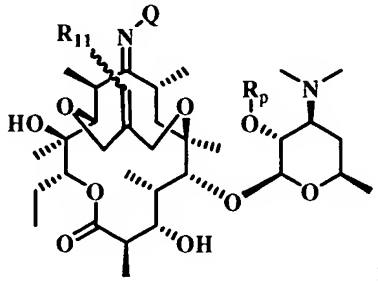
11. The process of claim 1, wherein for formula II, R_{11} is hydrogen and R_1 is *tert*-butyl.

12. The process of claim 1, wherein for formula III, R_{11} is hydrogen, Q is OAc, R_p is Ac, and Z is



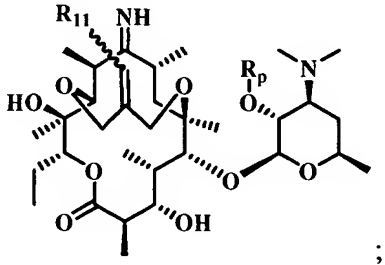
13. The process of claim 1, further comprising the steps of:

(a) hydrolyzing a compound of formula (III) with a mild acid to provide a compound of formula (IV-a):



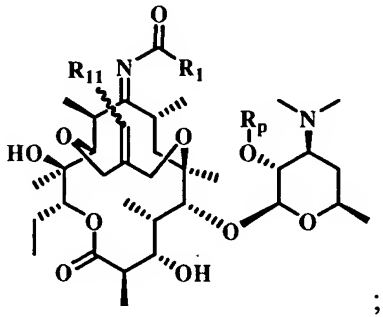
;

(b) reducing a compound of formula (IV-a) with a reducing agent to provide a compound of formula (V):

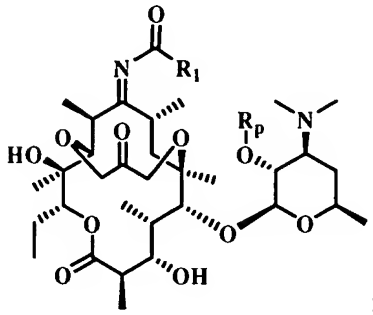


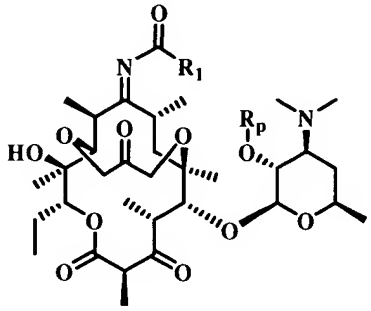
;

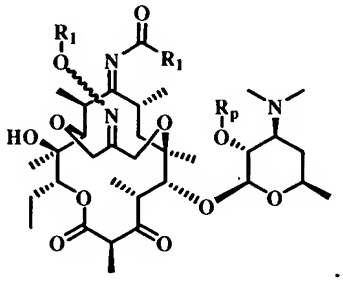
(c) acylating a compound of formula (V) with an acylating agent to provide a compound of formula (VI-a):



;

(d) oxidatively cleaving a compound of formula (VI-a) with a cleaving reagent or reagents to provide a compound of formula (VII-a):  ;

(e) oxidizing a compound of formula (VII-a) with an oxidizing agent or agents to provide a compound of formula (VIII-a):  ; and

(f) reacting a compound of formula (VIII-a) with a compound of formula (X): R_1—O—NH_2 in the presence of an acid or base to provide a compound of formula (IX-a):  .

14. The process of claim 13, wherein the steps of reacting and hydrolyzing are carried out in a one pot process.

15. The process of claim 13, wherein the steps of reducing and acylating are carried out in a one pot process.

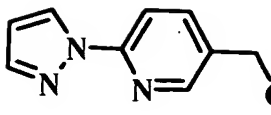
16. The process of claim 13, wherein the steps of oxidatively cleaving and oxidizing are carried out in a one pot process.

17. The process of claim 13, wherein for the step of hydrolyzing, the mild acid is selected from: hydrochloric acid, sulfuric acid, chloroacetic acid, dichloroacetic acid, or trifluoroacetic acid.

18. The process of claim 13, wherein for the step of hydrolyzing, the mild acid is aqueous hydrochloric acid.

19. The process of claim 13, wherein the step of hydrolyzing occurs in a protogenic solvent.
20. The process of claim 19, wherein the protogenic solvent is selected from water, methanol, ethanol, isopropanol, or butanol.
21. The process of claim 19, wherein the protogenic solvent is water.
22. The process of claim 13, wherein for formula IV, Q is hydroxy, R_{11} is hydrogen, and R_p is Ac.
23. The process of claim 13, wherein for the step of reducing, the reducing agent is selected from: lithium aluminum hydride, titanium(III)chloride, borane, hydrogen sulfide, or sodium nitrite.
24. The process of claim 13, wherein for the step of reducing, the reducing agent is a titanium (III) reducing agent.
25. The process of claim 24, wherein for the step of reducing, the titanium (III) reducing agent is titanium(III)chloride.
26. The process of claim 13, wherein the step of reducing occurs in a protogenic solvent.
27. The process of claim 26, wherein the protogenic solvent is selected from: water, methanol, ethanol, isopropanol, butanol, or mixtures thereof.
28. The process of claim 26, wherein the protogenic solvent is ethanol.
29. The process of claim 13, wherein the step of reducing occurs in the presence of an acid.
30. The process of claim 29, wherein the acid is selected from: acetic acid, formic acid, dilute hydrochloric acid, dilute phosphoric acid, or dilute sulfuric acid.
31. The process of claim 29, wherein the acid is aqueous hydrochloric acid.
32. The process of claim 13, wherein for formula V, R_{11} is hydrogen and R_p is Ac.
33. The process of claim 13, wherein for the step of acylating, the acylating agent is selected from: acetyl chloride, acetic anhydride, benzoyl chloride, benzoic anhydride, or benzyl chloroformate.
34. The process of claim 13, wherein the acylating agent is acetic anhydride.
35. The process of claim 13, wherein the step of acylating occurs in an aprotic solvent.
36. The process of claim 35, wherein the aprotic solvent is selected from: dichloromethane, chloroform, N,N -dimethylformamide, tetrahydrofuran, N-methylpyrrolidinone, or mixtures thereof.
37. The process of claim 35, wherein the aprotic solvent is dichloromethane.

38. The process of claim 13, wherein for formula VI-a, Q is Ac, R_{11} is hydrogen, and R_p is Ac.
39. The process of claim 13, wherein for the step of oxidatively cleaving, the oxidative cleavage reagents are an oxidant and a cleaving reagent.
40. The process of claim 39, wherein the oxidant is selected from permanganate ion osmium tetroxide.
41. The process of claim 39, wherein the oxidant is osmium tetroxide.
42. The process of claim 39, wherein the cleaving reagent is selected from: periodic acid, lead tetraacetate, manganese dioxide, potassium permanganate, sodium periodate, sodium metaperiodate, or *N*-iodosuccinamide.
43. The process of claim 39, wherein the cleaving reagent is sodium periodate.
44. The process of claim 39, wherein the step of oxidatively cleaving occurs in a solvent mixture selected from a mixture of water and one of the following solvents: 1,4-dioxane, tetrahydrofuran, tert-butanol, acetone, or diethyl ether.
45. The process of claim 44, wherein the solvent mixture is water in acetone.
46. The process of claim 13, wherein for formula VII-a, R_1 is methyl and R_p is Ac.
47. The process of claim 13, wherein for the step of oxidizing, the oxidizing agents are selected from: chromium(VI) reagents, Swern reagents, or Corey-Kim reagents.
48. The process of claim 13, wherein the step of oxidizing occurs in an aprotic solvent.
49. The process of claim 48, wherein the aprotic solvent is methylene chloride.
50. The process of claim 13, wherein for formula VIII-a, R_1 is methyl and R_p is Ac.
51. The process of claim 13, wherein for the step of reacting, the acid is selected from: hydrochloric acid, phosphoric acid, caomphorsulfonic acid, sulfuric acid, *para*-toluenesulfonic acid, or pyridinium *para*-toluene sulfonate.
52. The process of claim 13, wherein for the step of reacting, the acid is aqueous hydrochloric acid.
53. The process of claim 13, wherein the step of reacting occurs in a protogenic solvent.
54. The process of claim 53, wherein the protogenic solvent is ethanol.
55. The process of claim 13, wherein for the formula (X), R_1 is pyridyl-pyrazolyl.
56. The process of claim 13, wherein for the formula (IX-a), R_1 is pyridyl-pyrazolyl.
57. A process of preparing a compound of formula (XI):

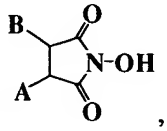


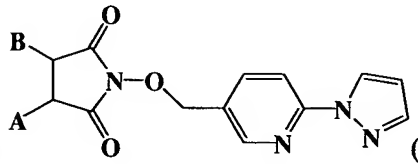
(XI), the process comprising the steps of:

(a) reacting pyrazole with methyl 6-chloronicotinate in the presence of a strong base to provide 6-pyrazol-1-yl-nioctinic acid methyl ester (compound of formula (XI-a));

(b) reducing the compound of formula (XI-a) prepared in Step (a) with a reducing agent to provide (6-pyrazol-1-yl-pyridin-3-yl)-methanol (compound of formula (XI-b));

(c) halogenating the compound of formula (XI-b) prepared in Step (b) with a chlorinating agent to provide 5-chloromethyl-2-pyrazol-1-yl-pyridine (compound of formula (XI-c));

(d) adding the compound of formula (XI-c), prepared in Step (c) with a compound of formula (XI-e): 

, wherein A and B are both hydrogen or taken together with the carbon atoms to which they are attached are selected from aryl, substituted aryl, heterocyclic, or substituted heterocyclic, to provide a compound of formula (XI-d): 

(XI-d); and

(e) hydrolyzing a compound of formula (XI-d), prepared in Step (d), with a base.

58. The process of claim 57, wherein for the step of reacting, the strong base is sodium hydride.

59. The process of claim 57, wherein for the step of reducing, the reducing agent is sodium borohydride.

60. The process of claim 57, wherein for the step of halogenating the chlorinating agent is thionyl chloride.

61. The process of claim 57, wherein for the step of adding, the base is ammonia.